ISTEP+ Spring 2009

Indiana Statewide Testing for Educational Progress Plus

Mathematics • English/Language Arts • Social Studies

Grade 7

Indiana Department of Education

SUPPORTING STUDENT SUCCESS

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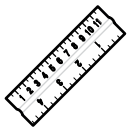
Web Version

Use only a Number 2 pencil to respond to the questions in this book. Responses written in pen CANNOT be scored.

If you see this symbol, you may use your reference sheet to help solve the problem.

If you see this symbol, you may use a calculator to solve problems in the test.



If you see this symbol, use your ruler as a straightedge or to solve the problem.

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Photograph of Major Taylor on his bike courtesy of the Major Taylor Association. Used by permission.

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NOTE: A correct answer **CANNOT** receive full credit if no work is shown.

Since you may receive partial credit for all problems in this test, it is important to show ALL work in the spaces provided in this book. When you see the words **Show All Work**, be sure to

- **show all the steps needed to solve the problem**
- **make your handwriting clear and easy to read**
- **write the answer on the answer line**

As you complete each problem, remember to

☑ **READ** the problem carefully

☑ **PLAN** how to solve the problem

☑ **SOLVE** the problem showing all steps

☑ **CHECK** your work

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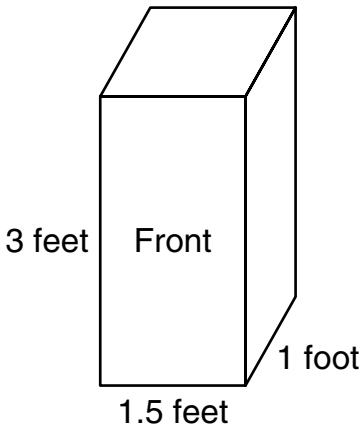
Session 1: Mathematics

1 Aiden's school locker is in the shape of a rectangular prism, as shown in the diagram below.



Aiden has only books in his locker. The volume of the books is 1.6 cubic feet.

How much volume, in cubic feet, is remaining in Aiden's locker?

Show All Work

Answer _____ cubic feet

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Aiden is allowed to decorate $\frac{1}{2}$ of the front of his locker.

What is the area, in square feet, that Aiden is allowed to decorate?

Show All Work

Answer _____ square feet

NOTE: For Spring 2009, Grade 7, Question 2 did not contribute to the calculation of a student's score. Therefore, this item is not included here.

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3

On each flight, an airplane is filled with 10 quarts of oil. The airline adds an additional $\frac{1}{2}$ quart of oil for each planned hour of flying.

Write an equation that can be used to determine the planned flying time, h, in hours, for an airplane filled with 13 quarts of oil.

Equation _____

The same airplane that was filled with 13 quarts of oil flies a distance of 3,300 miles.

What is the average speed, in miles per hour, of the airplane?

Show All Work

Answer _____ miles per hour

ATTENTION! Please do not leave your punchouts or reference sheet in this book.

STOP

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Use only a Number 2 pencil to respond to the questions in this book. Responses written in pen CANNOT be scored.

Whenever you see this icon, you will be doing a writing activity. Your writing will not be scored on your personal opinions or choices, but will be scored objectively on

- how clearly you address the prompt
- how well you organize your ideas
- how effectively you express yourself
- how consistently you use correct paragraphing, grammar, spelling, and punctuation

Be sure to use the rules of Standard English. Standard English is the English commonly used in formal writing. It does not include slang or jargon.

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Session 1: English/Language Arts

1 May I Recommend

Read the writing prompt below and complete the writing activity.

> Is there a book, movie, or television show you have recently read or seen that you would recommend to your friends?
>
> Write an essay in which you review a favorite book, movie, or television show. Include the title, the names of major characters or actors who played them, and a brief summary of the plot. Describe the special qualities in this book, movie, or television show that make it especially entertaining or interesting.

Be sure to include

- the title of the book, movie, or television show
- the names of the major characters (or actors)
- a summary of the plot
- why you would recommend the book, movie, or television show
- any special qualities that make the book, movie, or television show appealing
- an introduction, a body, and a conclusion to your essay

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Go On

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Use the Prewriting/Planning space or additional paper for notes, lists, webs, outlines, or anything else that might help you plan your writing. Then write your essay on the lined pages. Be sure to write neatly. Using the Editing Checklist on page 14, check your writing for correct paragraphing, grammar, spelling, punctuation, and the use of Standard English.

Prewriting/Planning

NOTE: Only your writing on the lined pages in this book will be scored.

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Prewriting/Planning

NOTE: Only your writing on the lined pages in this book will be scored.

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Essay

Title: _____

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Go On

Now check your writing using this Editing Checklist.

Editing Checklist

1. Check your capitalization and punctuation.
2. Spell all words correctly.
3. Check for sentence fragments or run-on sentences.
4. Keep verb tense consistent.
5. Make sure subject and verb agree.
6. Use words according to the rules of Standard English.
7. Remember to paragraph correctly.

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Session 2: English/Language Arts

For Session 2, you will read a story called "Save It for the Finish" and complete Numbers 1 through 3. You may look back at the story as often as you like.

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Save It for the Finish

by Celeste O'Dell

More than 100 years ago, when bicycle races drew huge crowds, the biggest draw of all was Marshall W. "Major" Taylor, who was born in rural Indiana in 1878.

Marshall W. "Major" Taylor

Charlie Ames trooped along behind his cousin, Douglas Brown, and wished he was back in Boston, watching his beloved baseball team, the Boston Beaneaters, beat the Cleveland Spiders. Instead, his cousin, who was undoubtedly the bossiest person in the world, was dragging him to a ridiculous bicycle race. It was the summer of 1892, and Charlie was spending two weeks in Indianapolis with his Aunt Charlotte and Uncle George. He loved his aunt and uncle, but he hadn't counted on being constantly under the thumb of Douglas, the Dictator, who was two years older than Charlie and constantly telling him how to do things or giving him unsolicited advice.

"Speed it up, Charlie," Douglas yelled as he crossed Pennsylvania Avenue, darting in front of a horse and wagon and just getting out of the way of a putt-putting motor car. "We don't want to miss the start."

"I'd just as soon not be trampled by a team of horses," Charlie yelled back, but Douglas paid no attention.

"See that bicycle shop," Douglas said after they had run a few blocks. "Major Taylor does trick cycling in front and always draws a big crowd, even rides upside down."

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Eventually they reached the field where the race was to be held and sat with the other spectators on the grass near the finish line. Douglas explained, as if Charlie were a five-year-old, that the racers would complete six laps around the course and that the finish line was the best place for them to watch.

When the cyclists began to move into position at the starting line, Douglas pointed to the rider with the #13 armband. "There he is; that's Major."

Charlie wasn't impressed. "He's just a kid."

"He's my age, nearly fourteen, but he has incredible talent, a genius. This is his second race, and I can't wait to see how he does because he won the first one flat out."

At this point, Charlie was barely listening—that's how annoying his cousin was. Charlie simply shook his head in disbelief, thinking that the owners of the Boston Beaneaters weren't foolish enough to permit fourteen-year-olds to play second base.

At the sound of the starting pistol, the crowd roared, but after the first lap of the race, Major was near the back of the pack. "I'm sure he'll catch up," Douglas announced, but he seemed worried, his confidence waning. When Major was still behind on the third and fourth laps, Douglas's face fell in obvious disappointment. "He should be winning. How could I be wrong?" For a fleeting moment, Charlie actually felt sorry for his cousin. Then on the fifth lap, Major did something very strange; he slowed up and fell even further behind. Burying his head in his hands, Douglas groaned. "This is crazy. Maybe he's sick."

But Major's odd behavior made Charlie sit up and take notice. He saw that as soon as the other cyclists relaxed, Major was able to edge around them and get on the outside of the group. "You know, Douglas," Charlie said, "Maybe he's not ill or crazy, maybe he's maneuvering himself into the best position."

Charlie's words actually had an effect on Douglas, who perked up, and at that instant, Major pulled away from the rest of the group in an amazing sprint. Leaping to their feet, the spectators cheered, with Charlie and Douglas probably screaming the loudest. Major

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accommodated the crowd by completing a full lap in what seemed to be a blink of time. The nearest cyclist was twenty yards behind him when he shot across the finish line.

"Save it for the finish, that's what the great cyclists do," said a man next to them, who was slapping hands with the people around him.

"That's what makes a winner," Douglas yelled.

After the pandemonium died down, Douglas slapped Charlie on the back. "You know, little cuz, I underestimated you. You understand strategy."

Charlie was momentarily stunned. Had he just received a compliment from Douglas? Then Charlie smiled. "I think it's your man Major who has the great sense of strategy. He may be just a kid, but he sure seems to know what he's doing. And I have to admit that bike racing is a pretty exciting sport—not as exciting as baseball, but . . ."

Douglas seemed not to have heard and was watching Major Taylor as he received his first-place medal. "I knew all along he'd win," Douglas said.

---

1 Why is Charlie uninterested in the bicycle race? When and why does he begin to show interest? Support your answer with details from the story.

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2 How was Douglas changed by the events of the story? Support your answer with details from the story.

3 The mood of a story is the feeling that it creates for the reader. Describe the mood of "Save It for the Finish" when the boys are at the bicycle race. Support your answer with details from the story.

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Session 1: Social Studies

1 Christianity and Islam are two of the world's major religions. There are several similarities and differences between the beliefs of these two religions.

Describe ONE similarity between the beliefs of Christianity and Islam.

_____

_____

Describe ONE difference between the beliefs of Christianity and Islam.

_____

_____

2 Countries have traded with other countries for thousands of years.

Describe TWO different ways countries benefit from voluntarily trading with each other.

1) _____

_____

2) _____

_____

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ISTEP+ Mathematics Reference Sheet

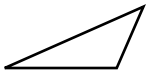
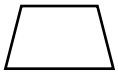
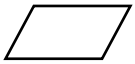
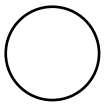
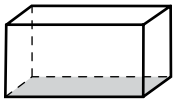
Figure	Formulas for Area (A) and Circumference (C)	
Triangle 	$A = \frac{1}{2}bh$	Area = $\frac{1}{2}$ × base × height
Rectangle 	$A = lw$	Area = length × width
Trapezoid 	$A = \frac{1}{2}h\,(b_1 + b_2)$	Area = $\frac{1}{2}$ × height × sum of bases
Parallelogram 	$A = bh$	Area = base × height
Square 	$A = s^2$	Area = side × side
Circle 	$A = \pi r^2$ $C = 2\pi r$	Area = π × square of radius Circumference = 2 × π × radius $\pi \approx 3.14$ or $\frac{22}{7}$

Figure	Formulas for Volume (V) and Surface Area (SA)	
Rectangular Prism 	$V = lwh$ $SA = 2lw + 2hw + 2lh$	Volume = length × width × height Surface Area = 2(length × width) + 2(height × width) + 2(length × height)
Cylinder 	$V = \pi r^2 h$ $SA = 2\pi r^2 + 2\pi rh$	Volume = π × square of radius × height Surface Area = 2 × π × square of radius + 2 × π × radius × height

Conversions

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet
1 mile = 1,760 yards

1 pound = 16 ounces
1 ton = 2,000 pounds

1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 meter = 1000 millimeters
1 meter = 100 centimeters
1 kilometer = 1000 meters

1 gram = 1000 milligrams
1 kilogram = 1000 grams

1 liter = 1000 cubic centimeters
1 liter = 1000 milliliters

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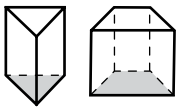
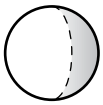
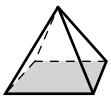
Figure	Formulas for Volume (V) and Surface Area (SA)		
General Prisms 	$V = Bh$	Volume = area of base × height Surface Area = sum of the areas of the faces	$\pi \approx 3.14$ or $\pi \approx \frac{22}{7}$
Sphere 	$V = \frac{4}{3}\pi r^3$ $SA = 4\pi r^2$	Volume = $\frac{4}{3} \times \pi \times$ cube of radius Surface Area = $4 \times \pi \times$ square of radius	
Right Circular Cone 	$V = \frac{1}{3}\pi r^2 h$	Volume = $\frac{1}{3} \times \pi \times$ square of radius × height	
Regular Pyramid 	$V = \frac{1}{3}Bh$	Volume = $\frac{1}{3}$ × area of base × height	

Slope-Intercept Form

$y = mx + b$

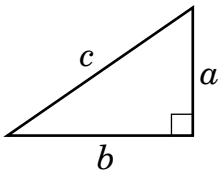
where m = slope and b = y-intercept

Simple Interest Formula

$I = prt$

where I = interest, p = principal, r = rate, and t = time in years

Pythagorean Theorem



$a^2 + b^2 = c^2$

Temperature Formulas

°C = $\frac{5}{9}$(F − 32)

°Celsius = $\frac{5}{9}$ × (°Fahrenheit − 32)

°F = $\frac{9}{5}$C + 32

°Fahrenheit = $\frac{9}{5}$ × °Celsius + 32

Distance Formula

$d = rt$

where d = distance, r = rate, and t = time

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Applied Skills Assessment

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